

App. No 10/018,145
Amdt. Dated July 28, 2004
Reply to Office Action of April 15, 2003

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1 – 22 (cancelled)

23. (original) An apparatus for joining together at least two substrates, each of which has an inner hole, said apparatus comprising:

a pin that is adapted to said inner holes of said substrates,

wherein said pin is provided with at least two noses that are movable radially relative to said pin, and

wherein said at least two noses have linear outer surfaces upon which edges of said inner holes of said substrates can glide downwardly during movement of said noses toward said pin.

24. (original) An apparatus according to claim 23, wherein said at least two noses keep said substrates spaced apart prior to a joining together process.

25. (original) An apparatus according to claim 23, wherein said pin is a centering pin.

26. (original) An apparatus according to claim 25, wherein said at least two noses are pivotably mounted on said centering pin.

27. (original) An apparatus according to claim 23, wherein at least one biasing unit is provided for an outward biasing of said at least two noses.

28. (original) An apparatus according to claim 27, wherein said biasing unit is

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provided with at least one spring.

29. (original) An apparatus according to claim 23, wherein means are provided for exerting pressure upon said substrates for effecting movement of said at least two noses toward said pin.

30. (original) An apparatus according to claim 23, wherein an actuating element is provided for radially moving said at least two noses.

31. (original) An apparatus according to claim 23, wherein said at least two noses are embodied as lever arms.

32. (original) An apparatus according to claim 30, wherein said actuating element is insertable between said at least two noses.

33. (original) An apparatus according to claim 30, wherein said actuating element has a conical configuration.

34. (original) An apparatus according to claim 30, wherein ends of said at least two noses that face said actuating element are rounded off.

35. (original) An apparatus according to claim 27, wherein means are provided for varying said biasing of said at least two noses.

36. (original) An apparatus according to claim 23, wherein a tapered element is disposed in said pin, and wherein said tapered element is movable counter to a biasing means.

37. (original) An apparatus according to claim 36, wherein said biasing means is a spring.

38. (original) An apparatus according to claim 36, wherein a biasing element

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is disposed between said tapered element and said at least two noses.

39. (original) An apparatus according to claim 36, wherein an outwardly directed biasing of said at least two noses is variable via a movement of said tapered element.

40. (original) An apparatus according to claim 27, wherein a tensioning element is provided for drawing said at least two noses inwardly, and wherein said tensioning element has a tensioning force that is not sufficient to overcome a normally outwardly directed biasing force of said at least two noses.

41. (original) An apparatus according to claim 40, wherein when said outwardly directed biasing force of said at least two noses is reduced, said tensioning force of said tensioning element draws said at least two noses inwardly.

42. (original) An apparatus according to claim 40, wherein said tensioning element is a spring ring that is disposed on said at least two noses.

43. (original) An apparatus according to claim 42, wherein said spring ring is disposed on an inner periphery of said at least two noses.

44. (original) An apparatus according to claim 23, wherein four noses are provided.

45. (currently amended) An apparatus for joining together at least two substrates, each of which has an inner hole, said apparatus comprising:

a pin having an outer diameter less than said inner holes of said substrates such that each of said substrates can freely pass over said pin upon insertion of said substrate onto said pin; and

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at least two noses, each nose being movable relative to said pin and having an outer surface for sliding engagement therealong of an inner hole edge location of a respective one of said substrates being inserted over said pin, each nose moving radially inwardly as it yieldably resisting resists the downward sliding movement of the respective engaged inner hole edge location of said respective one substrate as said respective one substrate is being inserted over said pin, wherein ~~said noses move radially inwardly relative to said pin during~~ the downward sliding movement of said respective one substrate along said noses is controlled by the inward movement of said noses relative to said pin and the yielding resistance of each of said noses relative to the other of said noses is such that said respective one substrate remains substantially centered on said pin as said respective one substrate slides along said noses, and the axial lower limits of said outer surfaces of said noses are axially above a lower extent of said pin having a length sufficient for said respective one of said substrates to move downwardly beyond said noses into a position on top of an already fully inserted substrate disposed therebelow; and

means for biasing said noses radially outwardly from said pin such that said noses immediately engage said respective one substrate as said one respective substrate moves downwardly along said pin.